IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Tom Gray, et al.
Serial No.	:	09/611,054
Filed	:	July 6, 2000
For	:	**MECHANISM FOR THE SHARING OF GUARANTEED RESOURCES**
Art Unit	:	3624
Examiner	:	Stefanos Karmis

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is filed in response to the Advisory Action mailed February 23, 2005, which maintained the rejections of pending claims 1-36 of the instant application as set forth in the Final Office Action mailed March 3, 2005. A timely filed Notice of Appeal was mailed on March 3, 2005 pursuant to 37 C.F.R. § 1.8(a), and was received by the Office on March 7, 2005. Accordingly, the two-month date for filing this Appeal Brief is May 3, 2005.

I. Real Party In Interest

The real party in interest is Mitel Networks Corporation, having a principal place of business at 350 Legget Drive, Kanata, Ontario, Canada K2K 2W7.

II. Related Appeals And Interferences

There are no related appeals or interferences to the instant application.

III. Status Of Claims

Pending claims 1-36 stand rejected and are appealed.

IV. Status Of Amendments

A final Office Action was mailed on November 3, 2004 which rejected claims 1-36. The applicants replied to the final Office Action on January 3, 2005. An Advisory Action was mailed on February 23, 2005 which maintained the rejections of claims 1-36.

V. Summary Of Claimed Subject Matter

The independent claims of the present application cover methods and systems for service allocation among a plurality of entities requiring service allocation in a communications or computing environment. Independent claim 1 provides a method for service allocation among a plurality of entities requiring service allocation in a communications or computing environment. (*see e.g.*, page 8, line 22 to page 9, line 6). In the method of claim 1, a supply of services of one or more holding entities is initialized. (*see e.g.*, page 8, line 24). Also, one or more bidding entities are endowed with an adjustably fixed amount of utility and a requirement of the supply of services. (*see e.g.*, page 8, line 25 to page 9, line 1). The fixed amount of utility is a measure of the possibility of failure due to lack of resources. (*see e.g.*, page 9, lines 1-3). Additionally, the supply of services of the holding entities is negotiated. (*see e.g.*, page 9, lines 3-4). Each bidding entity bids a selected amount of its fixed amount of utility. (*see e.g.*, page 9, lines 4-5). Finally, the supply of the holding entities is redistributed among the bidding entities based on the negotiating. (*see e.g.*, page 9, lines 5-6).

Independent claim 19 provides a system for service allocation among a plurality of entities requiring service allocation in a communications or computing environment including one or more holding entities, a plurality of bidding entities, and a broker. (*see e.g.*, page 9, lines 7-17). In the system of claim 19, the holding entities have a supply of services and the bidding entities are endowed with an adjustably fixed amount of utility and a requirement for an amount of the supply of services. (*see e.g.*, page 9, lines 9-12). The fixed amount of utility is a measure representative of the possibility of failure due to a lack of resources. (*see e.g.*, page 9, lines 12-13). In the system, the broker is in communication with the holding entities and the bidding entities for negotiating the supply of the holding entities and each bidding entity bids a selected amount of its fixed utility. (*see e.g.*, page 9, lines 13-15). Finally, in the system, the holding entity provides redistribution of the supply among the bidding entities based on the negotiating. (*see e.g.*, page 9, lines 16-17).

These claims provide control of the success or failure of any of the bidding entities. By endowing the entities with an adjustably fixed amount of utility and a requirement for an amount of the supply of services, wherein the fixed amount of utility is a measure representative of the possibility of failure, the success of each bidding entity can be macro-managed. (*see e.g.*, page 7, lines 1-7). The methods and systems of the claims make any amount of resource available to an entity if the entity has enough importance (*see e.g.*, page 6, lines 22-25). Correspondingly, bidding entities that are perceived to be less important can be endowed with less fixed amount of utility.(*see e.g.*, page 7, lines 1-3). Although the resources may be vitally important to the less important bidding entity, the entity can be allowed to fail to maintain a more important entity (*see e.g.*, page 7, lines 1-7).

VI.   Grounds Of Rejection To Be Reviewed On Appeal

- o   Claims 1-12, 15-30 and 33-36 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,498,786 to Kirby et al. ("Kirby et al.").

- o   Claims 13, 14, 31 and 32 stand rejected under 35 U.S.C. 103(a) as being obvious over Kirby et al.

o *For the purposes of this appeal only, applicants accept, without prejudice, the presumption that claims 1 to 18 stand or fall together and that claims 19-36 stand or fall together.*

VII. Argument

Claim 1 provides a method for service allocation among a plurality of entities requiring service allocation in a communications or computing environment. First, a supply of services of one or more holding entities is initialized. Then, one or more bidding entities are endowed with an adjustably fixed amount of utility and a requirement of the supply of services. The fixed amount of utility is a measure of the possibility of failure due to lack of resources. Next, the supply of services of the holding entities is negotiated, with each bidding entity bidding a selected amount of its fixed amount of utility. Finally, the supply of the holding entities is redistributed among the bidding entities based on the negotiating.

Claim 1 provides control of the success or failure of any of the bidding entities. By endowing one or more entities with an adjustably fixed amount of utility and a requirement for an amount of the supply of services, wherein the fixed amount of utility is a measure representative of the possibility of failure, the success of each bidding entity can be macro-managed. It makes any amount of resource available to an entity if the entity has enough importance (*see, e.g.*, page 6, lines 22 to 25). Correspondingly, bidding entities that are perceived to be less important can be endowed with less fixed amount of utility. Although the resources may be vitally important to the less important bidding entity, the entity can be allowed to fail to maintain a more important entity (*see, e.g.*, page 7, lines 1 to 7).

In contrast, Kirkby et al. disclose a resource allocation method based on the concept of proportional fairness. A set of users input a willingness to pay ("WtP") for network resources. A controller determines how the users' WtP are to be divided between the resources in order to determine the relative demands for the resources. Each resource is then divided between those users using it in proportion to how much they are willing to pay for the use of their share of it. The allocation takes into account the relative demands on all the resources in the network. A user may increase his share of the network resources allocated to him by increasing the value of his WtP.

Kirkby *et al.* neither teach nor suggest endowing one or more bidding entities with an adjustably fixed amount of utility, wherein the fixed amount of utility is a measure representative of the possibility of failure due to lack of resources. Kirkby *et al.* simply disclose that a set of users each have a WtP that is used to bid for various resources which are then allocated among the users based on their WtP, with each user receiving a proportional share (see column 3, lines 37 to 49). As Kirkby *et al.* do not teach or suggest the endowment of an adjustably fixed amount of utility, the system disclosed by Kirkby *et al.* cannot provide control of the success or failure of any of the users.

The method disclosed by Kirkby *et al.* is very different from that claimed in independent claim 1 in that users are simply allocated a portion of a resource in response to their demand based on with their own WtP. No control is held by the system over the WtP or the success or failure of each user. The system disclosed by Kirkby *et al.* merely allocates resources among users.

As such, independent claim 1 is patentable over Kirkby *et al.* and should therefore be allowed. As claims 2 to 18 depend on claim 1, which is allowable, these claims also are patentable over Kirkby *et al.* and should therefore be allowed.

Claim 19 provides a system for service allocation among a plurality of entities requiring service allocation in a communications or computing environment, comprising one or more holding entities, a plurality of bidding entities and a broker. The holding entities have a supply of services. The plurality of bidding entities is endowed with an adjustably fixed amount of utility and a requirement for an amount of the supply of services. The fixed amount of utility is a measure representative of the possibility of failure due to a lack of resources. The broker is in communication with the holding entities and the bidding entities for negotiating the supply of the holding entities. Each bidding entity bids a selected amount of its fixed utility. The holding entity provides redistribution of the supply among the bidding entities based on the negotiating.

In contrast, Kirkby *et al.* neither teach nor suggest a plurality of users that are <u>endowed</u> with an adjustably fixed amount of utility and a requirement for an amount of the supply of services. The system disclosed by Kirkby *et al.* merely allocates resources in proportion to the demand of each user. As the system disclosed by Kirkby *et al.* does not control the success or

failure of the users, there is no reason for <u>endowing</u> them with a fixed amount of utility. Instead, each user simply has a WtP that it uses to bid on the resources in accordance with its demand.

Accordingly, Applicants respectfully submit that independent claim 19 is patentable over Kirkby *et al.* and should therefore be allowed. As claims 20 to 36 depend either directly or indirectly on claim 19, which is allowable, these claims also are patentable over Kirkby *et al.* and should therefore be allowed.

VIII. <u>Claims Appendix</u>

A claims appendix containing a copy of the claims subject to this appeal is attached.

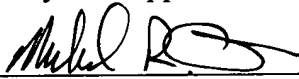## IX. <u>Evidence Appendix</u>

None (no evidence submitted).

X. <u>Related Proceedings Appendix</u>

None (no related proceedings).

The Commissioner is hereby authorized to charge any additional fees and credit any overpayment associated with this Appeal to Jones Day Deposit Account No. 501432, ref: 481340010023.

Respectfully submitted,
JONES DAY
Attorneys for Applicant

By: Michael R. Asam   Reg. No. 51,417
Jones Day
North Point
901 Lakeside Avenue
Cleveland, Ohio 44114
(216) 586-7770

CLAIMS APPENDIX

Claim 1 (original): A method for service allocation among a plurality of entities requiring service allocation in a communications or computing environment comprising the steps of:

a) initializing a supply of services of one or more holding entities;

b) endowing one or more bidding entities with an adjustably fixed amount of utility and a requirement for an amount of said supply of services, wherein said fixed amount of utility is a measure representative of the possibility of failure due to lack of resources;

c) negotiating said supply of services of said holding entities, with each bidding entity bidding a selected amount of its said fixed amount of utility;

d) redistribution of said supply of said holding entities among said bidding entities based on said negotiating.

Claim 2 (previously presented): The method of claim 1, wherein said supply of services is comprised of a plurality of resources.

Claim 3 (previously presented): The method of claim 2, wherein said plurality of resources are available at multiple service levels.

Claim 4 (previously presented): The method of claim 1, wherein said initializing, said endowing, said negotiating and said redistribution operate dynamically in response to a change in said supply of services, said fixed amount of utility or said requirement for said supply of services.

Claim 5 (previously presented): The method of claim 1, wherein said redistribution of said supply represents a guarantee of service.

Claim 6 (previously presented): The method of claim 2, wherein said resources are one or more physical devices.

Claim 7 (previously presented): The method of claim 3, wherein said multiple service levels includes said resources available at varying levels of quality.

Claim 8 (previously presented): The method of claim 3, wherein said multiple service levels includes said resources available at varying capacities.

Claim 9 (previously presented): The method of claim 3, wherein said multiple service levels are determined by resource sets.

Claim 10 (previously presented): The method of claim 1, wherein said redistribution is done deterministically.

Claim 11 (previously presented): The method of claim 1, wherein said redistribution is done statistically.

Claim 12 (previously presented): The method of claim 1, wherein said redistribution is based upon a proportion of said supply held by said holding entity using a holding price.

Claim 13 (previously presented): The method of claim 12, wherein said proportion is described by the formula:

$$R_c (1 - P_c / P_b)^{exp}$$, wherein R_c is the current allocation of resource to agent, P_c is the current holding price of resource as held by an individual agent, P_b is the bid price and exp is an exponent.

Claim 14 (original): The method of claim 13, wherein exp=0.5.

Claim 15 (previously presented): The method of claim 1, wherein each said bidding entity is represented by an agent.

Claim 16 (previously presented): The method of claim 15, wherein each said supply of services is represented by an agent.

Claim 17 (previously presented): The method of claim 16, wherein said holding entity is represented by an agent.

Claim 18 (previously presented): The method of claim 6, wherein said physical devices are a plurality of telephones, telephone interface circuits, trunk interface circuits, telephone lines and telephone switches for establishing or maintaining a voice or data communication.

Claim 19 (original): A system for service allocation among a plurality of entities requiring service allocation in a communications or computing environment comprising:

a) one or more holding entities having a supply of services;

b) a plurality of bidding entities endowed with an adjustably fixed amount of utility and a requirement for an amount of said supply of services, wherein said fixed amount of utility is a measure representative of the possibility of failure due to lack of resources;

c) a broker in communication with said holding entities and said bidding entities for negotiating said supply of said holding entities, with each bidding entity bidding a selected amount of its said fixed amount of utility;

wherein said holding entity provides redistribution of said supply among said bidding entities based on said negotiating.

Claim 20 (previously presented): The system of claim 19, wherein said supply of services is comprised of a plurality of resources.

Claim 21 (previously presented): The system of claim 19, wherein said plurality of resources are available at multiple service levels.

Claim 22 (previously presented): The system of claim 19, wherein said holding entities, said bidding entities and said broker operate dynamically in response to a change in said supply of services, said fixed amount of utility or said requirement for said supply of services.

Claim 23 (previously presented): The system of claim 19, wherein said redistribution of said supply represents a guarantee of service.

Claim 24 (previously presented): The system of claim 20, wherein said resources are one or more physical devices.

Claim 25 (previously presented): The system of claim 21, wherein said multiple service levels include said resources available at varying levels of quality.

Claim 26 (previously presented): The system of claim 21, wherein said multiple service levels including resources available at varying capacities.

Claim 27 (previously presented): The system of claim 21, wherein said multiple service levels are determined by resource sets.

Claim 28 (previously presented): The system of claim 19, wherein said redistribution is done deterministically.

Claim 29 (previously presented): The system of claim 19, wherein said redistribution is done statistically.

Claim 30 (previously presented): The system of claim 19, wherein said redistribution is based upon a proportion of said supply held by said holding entities using a holding price.

Claim 31 (presently amended): The system of claim 30, wherein said proportion is described by the formula:

$$R_c \, (1 - P_c / P_b)^{exp}$$, wherein R_c is the current allocation of resource to agent, P_c is the current holding price of resource as held by an individual agent, P_b is the bid price and exp is an exponent.

Claim 32 (original): The system of claim 31, wherein exp=0.5.

Claim 33 (previously presented): The system of claim 19, wherein each said bidding entity is represented by an agent.

Claim 34 (previously presented): The system of claim 33, wherein each said supply of services is represented by an agent.

Claim 35 (previously presented): The system of claim 34, wherein said holding entity is represented by an agent.

Claim 36 (previously presented): The system of claim 24, wherein said physical devices are a plurality of telephones, telephone interface circuits, trunk interface circuits, telephone lines and telephone switches for establishing or maintaining a voice or data communication.